

US Patent Application No. 10/712,016
Reply to Final Office Action mailed on January 11, 2006

Remarks/Arguments

Claims 1-19 are pending in the application. Claims 1-19 remain in the application. Claims 1-4, 12, 15, and 17 are amended.

Claim Amendments

Applicant kindly asks the examiner to enter the amendments as listed above. Applicant believes that the examiner's rejection is mainly due to a different interpretation of wording used in the claims. Therefore, Applicant has amended 1, 2, 15, and 17 to more clearly define the claimed invention. Furthermore, Applicant has amended claims 3, 4, and 12 to be consistent with claims on which they depend. No new subject matter has been added in the amendments.

Claim Rejections - 35 USC § 102

Claims 15-19 are rejected under 35 USC 102(b) as being anticipated by McFarland (US 4,573,854 A).

Having regard to amended claim 15, Applicant discloses and claims a method for transferring a load through a rear door opening of a vehicle comprising the features of (emphasis added):

disposing a lift unit comprising a lift support base and a left hand side and a right hand side lift actuator behind a rear bumper of the vehicle with the lift support base being in close proximity to ground, the lift support base supporting a load platform thereupon, the lift support base being mechanically connected at a left hand side and at a right hand side to the left hand side lift actuator and the right hand side lift actuator, respectively, such that the lift support base is oriented substantially perpendicular to a longitudinal axis of each of the left and the right hand side lift actuator, the left hand side and the right hand side lift actuator being movably attached to a left hand side and a right hand side of a base via a left hand side gear mechanism and a right hand side gear mechanism, respectively, the base being attached inside the vehicle to a vehicle floor such that a rear end of the base is located in proximity to the rear door opening;

disposing the load on the load platform;

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using the left hand side and the right hand side lift actuator lifting the lift support base with the load platform substantially straight in a substantially vertical direction to a vertical position suitable for moving substantially straight in a substantially horizontal direction the load platform into the vehicle;

moving substantially straight in a substantially horizontal direction the load platform with the load from the lift support base disposed behind the rear bumper of the vehicle through the rear door opening into the vehicle; and,

using the left and right hand side gear mechanism, translationally and rotationally moving the lift support base and the lift actuators through the rear door opening to a position inside the vehicle where the lift support base is disposed in proximity to the rear door opening and oriented substantially vertical.

Applicant respectfully submits that cited reference McFarland does not teach any of the features as highlighted above.

Firstly, McFarland does NOT teach the feature of: "*disposing... a left hand side and a right hand side lift actuator behind a rear bumper of the vehicle...*", BUT, as clearly shown in Fig. 1 and described in col. 4 lines 46 to 66, a pair of drive links 36 and drag links 38 pivotally movable mounted at a first end to a carriage 30 inside the vehicle and at a second opposite end pivotally movable mounted to a chair rack 34 disposed outside the vehicle.

Secondly, McFarland does NOT teach the feature of: "*the lift support base supporting a load platform thereupon,*", BUT, as clearly shown in Fig. 1 and described in col. 5 lines 4 to 6, a support frame 48 which has a main wheel rail 50 and a front wheel rail 52 attached to the lower end thereof.

Thirdly, McFarland does NOT teach the feature of: "*lifting the lift support base with the load platform substantially straight in a substantially vertical direction...*", BUT, as clearly shown in Figs. 1 to 3 and described in col. 5 lines 53 to 68, "The chair is then collapsed, and the rack and chair are rotated about drive links 36. ... This rotation is completed when rack 34 contacts shock absorber 88 which is mounted on post 90 attached to carriage 30 ...". In other words, McFarland teaches rotational movement of the rack and the collapsed chair from a position behind a rear bumper of a vehicle with the collapsed

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chair being oriented substantially vertical – Fig. 1 – through a midway point – Fig. 2 – where the collapsed chair has cleared the upper portion of the rear door opening to a position – Fig. 3 – where the collapsed chair is disposed partially inside the vehicle with the collapsed chair being oriented at a small angle to the horizontal.

Fourthly, McFarland does NOT teach the feature of: *“moving substantially straight in a substantially horizontal direction the load platform with the load from the lift support base disposed behind the rear bumper of the vehicle through the rear door opening into the vehicle;”*, BUT, as clearly shown in Figs. 3 and 4 and described in col. 64 to 68, “Rack 34 and chair 12 attached thereto may then be moved further into rear compartment 14 ... This allows the door 92 of rear compartment 14 to be closed”. In other words, after the collapsed chair is disposed partially inside the vehicle, as shown in Fig. 3, the rack with the chair is then moved further into the vehicle. As is evident, these teachings are substantially different from the above feature. In particular, since McFarland does not teach a load platform supported by a lift support base but a support frame 48 which has a main wheel rail 50 and a front wheel rail 52 attached to the lower end thereof, as discussed above, he cannot teach the feature of (emphasis added): *“moving... the load platform with the load from the lift support base”*. Furthermore, since McFarland teaches rotational movement of the rack with the collapsed chair to a position where the collapsed chair is disposed partially inside the vehicle, as clearly shown in Fig. 3, he cannot teach the feature of: *“moving substantially straight in a substantially horizontal direction ... the load from the lift support base disposed behind the rear bumper of the vehicle through the rear door opening into the vehicle”*.

Applicant respectfully submits that amended claim 15 is not anticipated by McFarland and, therefore, is allowable.

Having regard to amended claim 17, Applicant respectfully submits that McFarland does not teach the feature of (emphasis added): *“moving the extension unit from a first position where a rear portion of the extension unit is disposed outside the rear door opening to a second position where the complete extension unit is disposed within the*

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vehicle.”, BUT, as clearly shown in Figs. 1 to 4 a carriage 30 which is longitudinally movable within chassis 18 disposed inside the vehicle.

Furthermore, claim 17 depends on a claim that is believed to be allowable and as such is also allowable.

Applicant respectfully submits that each of claims 16, 18, and 19 depend on a claim that is believed to be allowable and as such are also allowable.

Claim Rejections – 35 USC § 103

Claims 1-14 are rejected under 35 USC 103(a) as being unpatentable over Wolfe.

Having regard to amended claim 1, Applicant discloses and claims an inside vehicle lift for transferring a load through a rear door opening of a vehicle comprising the features of (emphasis added):

a load platform for receiving the load, the load platform being horizontally movable between a loading position with the load platform being disposed behind a rear bumper of the vehicle and a transport position inside the vehicle;

a base for being attached inside the vehicle to a vehicle floor such that a rear end of the base is located in proximity to the rear door opening;

a lift unit comprising a lift support base and a left hand side and a right hand side lift actuator, the lift support base for supporting the load platform when disposed outside the vehicle, the lift support base being mechanically connected at a left hand side and at a right hand side to the left hand side lift actuator and the right hand side lift actuator, respectively, such that the lift support base is oriented substantially perpendicular to a longitudinal axis of each of the left and the right hand side lift actuator, the lift actuators for moving the lift support base with the load platform substantially straight in a substantially vertical direction between a first vertical position with the load platform being in close proximity to ground and a second vertical position suitable for horizontally moving the load platform into the vehicle; and,

a left hand side gear mechanism movably attached to a left hand side of the base and the left hand side lift actuator and a right hand side gear mechanism movably attached to a right hand side of the base and the right hand side lift actuator, respectively, the left hand side gear mechanism and the right hand side gear mechanism for providing translational and rotational movement of the lift unit through the rear door opening of the

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vehicle between a first position inside the vehicle with the lift support base being disposed in proximity to the rear door opening and oriented substantially vertical and a second position outside the vehicle with the lift support base and the lift actuators being disposed behind the rear bumper and the lift support base oriented substantially horizontal.

Applicant respectfully submits that cited reference Wolfe does not teach anything similar to the features as highlighted above.

Firstly, cited reference Wolfe does NOT teach the feature of: "...the lift support base is oriented substantially perpendicular to a longitudinal axis of each of the left and the right hand side lift actuator, ...", BUT, as clearly shown in Figs. 6 to 11, the lift support is pivotally movable attached to the lift actuators for allowing angles of 0°, as shown in Fig. 6, to angles larger than 90°, as shown in Figs. 8 to 11.

Secondly, cited reference Wolfe does NOT teach the feature of: "the lift actuators for moving the lift support base with the load platform substantially straight in a substantially vertical direction...", BUT, as clearly shown in Figs. 10 and 11, the lift actuators for moving the lift support base with the load platform substantially straight at a substantial angle to the vertical direction.

Thirdly, cited reference Wolfe does NOT teach the features of: "a lift unit comprising a lift support base and a left hand side and a right hand side lift actuator, ...", and: "a left hand side gear mechanism movably attached to a left hand side of the base and the left hand side lift actuator and a right hand side gear mechanism movably attached to a right hand side of the base and the right hand side lift actuator, respectively, the left hand side gear mechanism and the right hand side gear mechanism for providing translational and rotational movement of the lift unit through the rear door opening of the vehicle between a first position inside the vehicle with the lift support base being disposed in proximity to the rear door opening and oriented substantially vertical and a second position outside the vehicle with the lift support base and the lift actuators being disposed behind the rear bumper and the lift support base oriented substantially horizontal.". Cited reference Wolfe teaches, as shown in Figs. 6 to 11, a lift support base 6 attached to

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extension 9, which is pivotally movable attached to the lift actuators 5. The lift actuators 5 are pivotally movable attached in trunnions 23 to a vehicle frame, as shown in Fig. 1 and described in col. 2 line 55. Swing cylinders 14 are pivotally movable mounted to the lift actuators 5 and the vehicle frame, as shown in Figs. 1 and 6 to 11. A lever 17 attached to the extension 9 interacts with an inclined surface of the vehicle floor to keep the lift support base 6 in a vertical position when inside the vehicle. In operation, the swing cylinders 14 push the bottom of the lift actuators outside the vehicle while due to interaction of the lever 17 with the vehicle floor the lift support base is rotated into a horizontal orientation. In other words, the lift support base is rotated into a horizontal orientation while the lift actuators are swung outside the vehicle at the bottom end. This operation requires a substantially different mechanism than the gear mechanism for disposing the lift unit comprising the lift support base and the lift actuators behind the rear bumper of the vehicle.

Regarding the examiner's statement that it would have been obvious to one of skill in the art to move the apparatus cited reference Wolfe to the rear of a vehicle, Applicant strongly disagrees. Installation of this apparatus requires major changes to the vehicle which are only possible for a driver's or passenger's door but not the rear of the vehicle. This becomes immediately evident to those of skill in the art looking at Fig. 1 of cited reference Wolfe and common knowledge in automobile technology. At the rear of a vehicle it is not possible to modify the vehicle floor due to the rear axle, suspension mechanisms and in most cases placing of a gasoline tank. Furthermore, looking at Figs. 10 and 11, the base 18 of the apparatus would require an installation substantially above the rear bumper in order for the lift support base 6, the shaft 11, and the lever 17 to clear the same when moved to the outside position, substantially reducing the space available to clear the upper end of the rear door opening. Finally, it would require substantially longer lift actuators – likely too long for most vehicles – to be mounted near the vehicle roof. Considering all these disadvantages, one of skill in the art would not try to install the apparatus of cited reference Wolfe in the rear of a vehicle.

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On the other hand, the inside vehicle lift as defined by the features of amended claim 1 is highly advantageous by enabling embodiments supporting installation in the rear of the vehicle by just securing the base to the vehicle. Furthermore, the features of claim 1 provide a vehicle lift for lifting a load substantially vertically and then transferring the load substantially horizontally into the vehicle, thus maximizing the size of load that can be transferred through a given rear door opening of a vehicle.

Therefore, Applicant respectfully submits that the inside vehicle lift defined in amended claim 1 is not obvious with regard to the teachings of cited reference Wolfe.

Having regard to amended claim 2, Applicant respectfully submits that cited reference Wolfe does not teach anything similar to the feature of (emphasis added): *“an extension unit being movably attached to the base for substantially straight movement in a substantially horizontal direction between a first position where the extension unit is completely inside the vehicle and a second position where a portion of the extension unit is moved through the rear door opening.”* The item 25, cited by the examiner refers to a piston rod of swing cylinder 14. While the piston rod extends, one of skill in the art would not consider this an “extension unit”. Furthermore, the piston rod is accommodated in swing cylinder 14 which is attached to the vehicle frame and not to the base. Therefore, Applicant respectfully submits that amended claim 2 is not obvious with regard to the teachings of cited reference Wolfe.

Applicant respectfully submits that cited reference Wolfe does not teach anything similar to the feature of amended claim 3 since this feature depends on the extension unit as defined in claim 2.

Furthermore, each of claims 2 and 3 depend on a claim that is believed to be allowable and as such are also allowable.

Applicant respectfully submits that each of claims 4-6, and 7-11 depend on a claim that is believed to be allowable and as such are also allowable.

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Having regard to claim 12, the examiner rejects the claim for being obvious to one of skill in the art to rearrange the linkage elements of cited reference Wolfe in order to accommodate different loads, vehicles or desired actuations means. In the following, Applicant describes the mechanism taught in cited reference Wolfe with a referral to the four levers of a four-bar linkage as stated by the examiner. Accordingly, cited reference Wolfe teaches, as shown in Figs. 6 to 11, swing cylinders 14 – **first lever** - pivotally movable mounted to the vehicle frame at a first end and pivotally movable mounted to lift actuators 5 – **second lever** - which are also pivotally movable mounted to the vehicle frame. An extension 9 – **third lever** - attached to lift support base 6 is pivotally movable mounted to a bottom end of the lift actuators 5. A lever 17 – **fourth lever** - attached to the extension 9 interacts with an inclined surface of the vehicle floor to keep the lift support base 6 in a vertical position when inside the vehicle. In operation, the swing cylinders 14 push the bottom of the lift actuators 5 outside the vehicle while due to interaction of the lever 17 with the vehicle floor the lift support base 6 is rotated into a horizontal orientation. In other words, the lift support base is rotated into a horizontal orientation while the lift actuators are swung outside the vehicle at the bottom end. This operation requires a substantially different mechanism than the gear mechanism defined by the features of claim 12 for disposing the lift unit comprising the lift support base and the lift actuators behind the rear bumper of the vehicle. Furthermore, in the four-bar linkage as stated by the examiner the lift actuators 5 are the second lever which is not the case in the gear mechanism defined in claim 12. Applicant disagrees with the examiner's rejection, one of skill in the art would not rearrange the four-bar linkage taught in cited reference Wolfe since it would not result in disposing the lift unit comprising the lift support base and the lift actuators behind the rear bumper of the vehicle.

Therefore, Applicant respectfully submits that the feature defined in claim 12 is not obvious with regard to the teachings of cited reference Wolfe.

Having regard to claim 13, Applicant respectfully submits that cited reference Wolfe does not teach anything similar to the feature of (emphasis added): "*wherein the lift actuator comprises a lift actuator support for being in mechanical contact with the*

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extension unit for providing vertical support to the lift unit when disposed outside the vehicle for loading.”, BUT, as clearly shown in Figs. 6 to 11 and described in col. 3 lines 12 to 14, a stop 28 on rod end 13 for holding the lift support base 6 in a horizontal position.

Therefore, Applicant respectfully submits that the feature defined in claim 13 is not obvious with regard to the teachings of cited reference Wolfe.

Furthermore, each of claims 12 and 13 depend on a claim that is believed to be allowable and as such are also allowable.

Applicant respectfully submits that claim 14 depends on a claim that is believed to be allowable and as such is also allowable.

Applicant would like to note for the record that he disagrees with the examiner's statement that “translational” is simply defined as “transfer from one place to another”. For example, the definition of translation in the Oxford Science Dictionary (Third Edition) is: “*Motion of a body in which all the points in the body follow parallel paths*”. Those of skill in the art readily understand translation as a motion following a straight line. It is common knowledge in the art that any motion of a body can be described as combination of translation with rotation.

However, in the above claim amendments Applicant has taken the examiner's objection into consideration by rewording the expression “translational” where considered relevant.

Finally, Applicant would like to for the record traverse the holding of the present office action as FINAL. The examiner's statement that the amendment necessitated the new ground(s) of rejection appears incorrect. Applicant would appreciate to be given some reason as to why the minor amendment of claim 1 to more clearly define the claimed subject matter by inserting the wording “approximately linearly” necessitated the new ground(s) of rejection, resulting in a rejection for being obvious in view of Wolfe instead of being anticipated by McFarland. Therefore, Applicant respectfully requests that the holding of the office action as FINAL be withdrawn.

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Applicant kindly requests favourable reconsideration of the present application.

**Please charge any additional fees or credit any overpayment to Deposit
Account No. 50-1142.**

Respectfully submitted,



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